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| 10/533,609 | 05/11/2005 | Shin Ishikawa | JFE-09-1140 | 1780 |

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| EXAMINER | |
|---|---|
| KESSLER, CHRISTOPHER S | |

| ART UNIT | PAPER NUMBER |
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| 1793 | |

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| 10/07/2009 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pto.phil@dlapiper.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/533,609 | ISHIKAWA ET AL. | |
| | Examiner | Art Unit | |
| | CHRISTOPHER KESSLER | 1793 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-5 and 7-31* is/are pending in the application.

4a) Of the above claim(s) *17-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Status of Claims*

1. Responsive to the amendment filed 25 June 2009, claims 1-5, and 7-16 are amended. Claims 1-5 and 7-16 are currently under examination.

### *Status of Previous Rejections*

2. Responsive to the amendment filed 25 June 2009, the rejections are maintained.

### *Oath/Declaration*

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
It does not identify the citizenship of each inventor.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that

the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5 and 7-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0160248 A1 issued to Takao et al. (hereinafter "Takao").

Regarding claims 1-2, Takao teaches the invention substantially as claimed. Takao teaches a stainless steel for fuel cell separators (see Title, Abstract). Takao teaches the same ranges as claimed with regard to C, N, Cr and an overlapping range with respect to Mo (see SUMMARY OF THE INVENTION) and also teaches several examples of steel meeting the compositional requirements of the claims (see Table 2, for example). Regarding the content of aluminum, Takao does not teach that any aluminum is in the alloy examples. However, Takao teaches that aluminum may be added to the alloy in small amounts to improve the properties (see [0077]). It would have been obvious to one of ordinary skill in the art at time of invention to have added Al, because Takao teaches that the addition may be advantageous (see [0077]).

Regarding the limitation of the Al, Cr and Fe in the passive film, Takao does not describe this feature. However, Takao teaches that the steel is treated

with a solution of nitric and hydrochloric acid meeting the range taught in the instant specification (see [0048] and Examples). The similar composition processed similarly must have the same properties. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Applicant is further directed to MPEP 2112.01.

Regarding claim 3, Takao teaches to add Mn in the amount as claimed (see [0065]-[0066]).

Regarding claim 4, Takao does not teach the claimed property. However, Takao teaches that the steel is treated with a solution of nitric and hydrochloric acid meeting the range taught in the instant specification (see [0048] and Examples). The similar composition processed similarly must have the same properties. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Applicant is further directed to MPEP 2112.01.

Regarding claim 5, Takao teaches Cr in the amount as claimed (see [0067]-[0068]).

Regarding claim 7, Takao teaches to add Mn in the amount as claimed (see [0065]-[0066]).

Regarding claims 8-10, Takao does not teach the claimed property. However, Takao teaches that the steel is treated with a solution of nitric and hydrochloric acid meeting the range taught in the instant specification (see [0048] and Examples). The similar composition processed similarly must have the same properties. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Applicant is further directed to MPEP 2112.01.

Regarding claims 11-16, Takao teaches Cr in the amount as claimed (see [0067]-[0068]).

6. Claims 1-5 and 7-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT Document WO 02/13300 A1 (hereinafter "Hodgson").

Regarding claim 1, Hodgson teaches the invention substantially as claimed. Hodgson teaches a stainless steel for fuel cell separators is made by a surface treatment (see abstract, pp. 1-3). Hodgson teaches that the treatment comprises a pickling in acid, which may include a combination of acids including sulfuric and nitric acids (see pp. 10-11, for example). It would have been obvious to one of ordinary skill in the art to have mixed and optimized the acid solution, because Hodgson teaches that the acids are equivalents for the same purpose (see pp. 10-11). Applicant is further directed to MPEP 2144.06.

Hodgson further teaches that the steel composition may be a 316 or 316L SS (see pp. 12-14 and table 1, for example). The Examiner takes Official Notice that the composition of 316 L SS substantially overlaps the claimed compositional ranges, establishing a prima facie case of obviousness for those ranges. It would have been obvious to have selected a steel composition in the claimed ranges because the composition of 316L SS overlaps said ranges. Applicant is directed to MPEP 2144.03 and 2144.05.

Regarding the limitations on surface properties, Hodgson teaches that the Cr/Fe ratio meets the claimed ratio (see pp. 17-18 and Fig. 4). Hodgson does not teach that aluminum is present, meeting the limitation of the claim. The similar composition processed similarly must have the same properties. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Applicant is further directed to MPEP 2112.01.

Regarding claim 2, Hodgson does not teach the range as claimed. However, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In the instant case, the limit of the compositional range of 316 SS taught by Hodgson would have been close enough to that claimed to have been expected

to have the same properties. Further, Hodgson teaches that any stainless steel of the 300 series may be used (see pp. 6-7). The Examiner takes Official notice that it would have been obvious to one of ordinary skill in the art to have used a different 300 series stainless steel meeting the limitations of the claims. Applicant is further directed to MPEP 2144.03.

Regarding claim 3, the composition of 316L overlaps the claimed range. Applicant is further directed to MPEP 2144.05. Also, The Examiner takes Official notice that it would have been obvious to one of ordinary skill in the art to have used a different 300 series stainless steel meeting the limitations of the claims. Applicant is further directed to MPEP 2144.03.

Regarding claim 4, the similar composition processed similarly must have the same properties, thus a prima facie case of obviousness is established. Applicant is further directed to MPEP 2112.01.

Regarding claim 5, Hodgson does not teach the range as claimed. However, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In the instant case, the limit of the compositional range of 316 SS taught by Hodgson would have been close enough to that claimed to have been expected to have the same properties. Further, Hodgson teaches that any stainless steel of the 300 series may be used (see pp. 6-7). The Examiner takes Official notice that it would have been obvious to one of ordinary skill in the art to have used a

different 300 series stainless steel meeting the limitations of the claims. Applicant is further directed to MPEP 2144.03.

Regarding claim 7, the composition of 316L overlaps the claimed range. Applicant is further directed to MPEP 2144.05. Also, The Examiner takes Official notice that it would have been obvious to one of ordinary skill in the art to have used a different 300 series stainless steel meeting the limitations of the claims. Applicant is further directed to MPEP 2144.03.

Regarding claims 8-10, the similar composition processed similarly must have the same properties. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). Applicant is further directed to MPEP 2112.01.

Regarding claims 11-16, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In the instant case, the limit of the compositional range of 316 SS taught by Hodgson would have been close enough to that claimed to have been expected to have the same properties. Further, Hodgson teaches that any stainless steel of the 300 series may be used (see pp. 6-7). The Examiner takes Official notice that it would have been obvious to one of ordinary skill in the art to

have used a different 300 series stainless steel meeting the limitations of the claims. Applicant is further directed to MPEP 2144.03.

***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-5 and 7-16 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 6,835,487. Although the conflicting claims are not identical, they are not patentably distinct from each other because the overlapping range of composition would have established a prima facie case of obviousness for one of

ordinary skill in the art. Applicant's prior patent teaches in a separate claim that the steel is made by a pickling process, which would have yielded the same properties as claimed.

### *Response to Arguments*

9. Applicant's arguments filed 25 June 2009 have been fully considered but they are not persuasive.

Applicant argues that the requirement for restriction is improper and should be withdrawn. However, the restriction requirement was made final. The examiner believes that a lack of unity exists in the instant case due to a lack of inventive step.

Applicant argues that the claimed steel including a passive film with the claimed aluminum ratio would not have been obvious to one of ordinary skill in the art. Applicant argues that the claimed passive film Al/(Cr+Fe) ratio would not necessarily have been present in the steel of Takao. However, applicant has provided no evidence to this effect, only argument. The broad teaching of the instant application that the acid treatment used to make the steel is "totally different" from a standard pickling step is not sufficient to demonstrate that the claimed feature would not have been present in the steel of Takao. The instant specification also states that the parameters of the acid treatment, such as time, temperature, and even the acid mixture used may be adjusted in order to obtain the structure of the invention (see pp. 23-24). The immersion of the steel of a

composition matching that as claimed into a similar acid solution as taught by Takao would have had similar results in regards to the passive film.

In the remarks of 25 June, 2009, at page 17, Applicant argues that "Takao does not even recognize passive films, much less the importance of constituent elements of the passive films or their relative ratios." The examiner disagrees with this statement. Takao is directed to a stainless steel. One of ordinary skill in the art of stainless steels or metallurgy in general would immediately understand that the term "stainless steel" is defined by steel having a passive film, said film being relatively high in protective oxide-forming elements such as chromium. The fact that Takao does not explicitly describe the presence of the passive film, or what is the Al/(Cr+Fe) ratio therein is insufficient to prove that the steel of Takao with overlapping composition would not have met the limitations of the claims.

Applicant argues that the concentration of hydrochloric acid to nitric acid in aqua regia as described by Takao falls outside of the described acid treatment used to create the steel of the instant invention. However, the examiner disagrees with applicant's description of aqua regia. However, applicant's arguments cannot take the place of actual proof of technical information. Further, applicant has still not shown proof that the treatment of Takao would not have resulted in a similarly enriched passive layer.

Applicant argues that applicant's invention would not have been obvious to one of ordinary skill in the art from the disclosure of Hodgson because only some samples of Hodgson use the anodic treatment. This argument is not

persuasive. The whole purpose of Hodgson is to modify the surface (i.e., passive layer) of the steel by applying an electrochemical treatment, such as an anodic treatment. The fact that steel plates without this treatment (in other words, comparative examples) do not exhibit the claimed ratio is not an indication of any teaching away or that the claimed ratio would not have been present.

In the remarks of 25 June 2009, on page 20, applicant argues "Without this treatment, however, the Hodgson stainless steels as represented in other samples such as Samples 1 and 2 as described on page 17 have an iron content that is substantially greater than the chromium content." The examiner agrees that the comparative examples of Hodgson, Sample 1 and Sample 2, do not meet the limitations of the claims. One of ordinary skill in the art would have applied the treatment of Hodgson, because Hodgson teaches lower corrosion susceptibility due to the treatment (see Hodgson as cited above, pp. 16-17 and Fig. 4).

> In the remarks of 25 June 2009, on page 20, applicant argues Hodgson pertains, as recited in Claims 4 to 7 and Table 1 in the specification, to austenitic stainless steel (particularly, 300 series stainless steel, including SUS304 and SUS316). On the other hand, the stainless steel recited in Claims 1 to 16 is ferritic stainless steel, which does not include Ni. Thus, the composition and structure of the steel are quite dissimilar.

The examiner disagrees with these statements. The examiner appreciates the difference between ferritic stainless steel and austenitic stainless steel. The steel claimed in claims 1 to 16 is not ferritic stainless steel. Nowhere is the word ferritic used in the claims. The instant claims also do not state that the steel does not contain Ni. Applicant has chosen the claim language "comprising," meaning

that other elements, such as Ni, are not excluded. Applicant is further directed to MPEP 2111 and 2111.03. Thus, the claims are not limited to ferritic stainless steels, and the composition of Hodgson overlaps the claimed composition, as stated above.

Applicant argues that the steel of Hodgson would not have had the claimed properties because Hodgson employs a step that the instant application does not employ. However, the method used to create the steel is not what is claimed. The steel itself is what is claimed. Hodgson teaches a steel composition overlapping the claimed composition and teaches that the treatment causes enrichment of Cr to Fe in the passive layer (as cited above).

The examiner has used Official notice to describe steel compositions in the disclosure of Hodgson. The common knowledge or well-known in the art statement is taken to be admitted prior art because applicant has not traversed the examiner's assertion of official notice. Applicant is further directed to MPEP 2144.03.

Applicant argues that Hodgson does not show the impact of aluminum in the steel. However, the examiner notes that the composition including zero aluminum would have met the claim limitations. Hodgson does not include aluminum. For this same reason, the rejection based on applicant's prior patent is also maintained. The presence of aluminum is not necessary to meet the claim limitations.

## ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER KESSLER whose telephone number is (571)272-6510. The examiner can normally be reached on Mon-Fri, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit 1793

csk